

Claims:

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1. A semiconductor device including a large-diameter contact hole and a small-diameter contact hole formed to penetrate through an insulator film formed on a conductive portion to reach said conductive portion, said small-diameter contact hole being completely filled with a plug of a refractory conductive material, and said large-diameter contact hole having a sidewall formed of said refractory conductive material on a side surface of said large-diameter contact hole, said sidewall covering said side surface lower than a position which is lower than an upper end of said large-diameter contact hole by a predetermined distance, a wiring conductor layer being deposited on said insulator film to cover a top surface of said plug of said refractory conductive material, and to fill a space remaining in said large-diameter contact hole thereby to cover a bottom of said large-diameter contact hole and a surface of said sidewall of said refractory conductive material within said large-diameter contact hole.
2. A semiconductor device claimed in Claim 1 wherein each of said large-diameter contact hole and said small-diameter contact hole has a funnel-shaped portion formed on an upper portion thereof to open or spread upward, a surface of said funnel-shaped portion being covered with said wiring conductor layer.
3. A semiconductor device claimed in Claim 2 wherein said refractory conductive material is a material selected from the group consisting of a refractory metal and a silicide of a refractory metal.

- 9 4. A semiconductor device claimed in Claim 2 wherein said large-diameter contact hole has an aspect ratio of not greater than 2, and said small-diameter contact hole has an aspect ratio of greater than 2.
- 5 5. A semiconductor device claimed in Claim 4 wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.
- 10 6. A semiconductor device claimed in Claim 2 wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.
- 15 7. A semiconductor device claimed in Claim 1 wherein said refractory conductive material is a material selected from the group consisting of a refractory metal and a silicide of a refractor metal.
- 20 8. A semiconductor device claimed in Claim 7 wherein said large-diameter contact hole has an aspect ratio of not greater than 2, and said small-diameter contact hole has an aspect ratio of greater than 2.
9. A semiconductor device claimed in Claim 8 wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.
- 25 10. A semiconductor device claimed in Claim 7 wherein said predetermined distance is in the range of not less than 10% but not greater than 40% of a thickness of said insulator film.